



## IAC Student Activities Overview

2011 Lead Student Meeting

October 11, 2011

## Thomas Wenning

*R&D Staff*

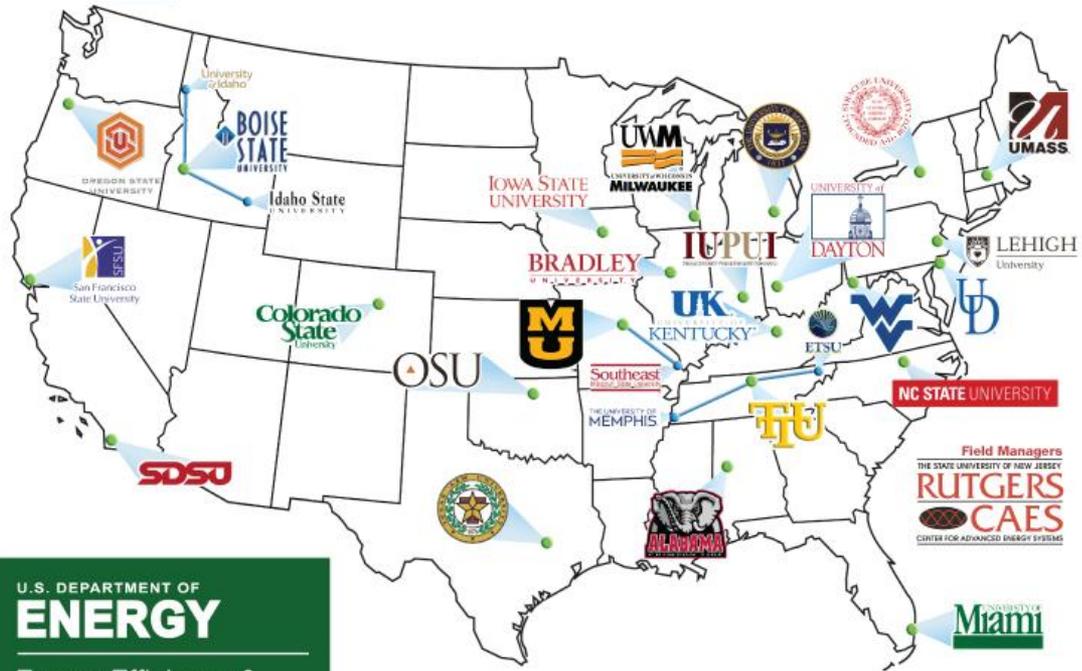
Residential, Commercial, and  
Industrial Energy Efficiency  
Oak Ridge National Laboratory

# Overview

- IAC Metrics & Student Info
- Other Activities
- Student Certificates
- IAC Forum website
- Student Registry
- Program Highlights
- Upcoming Events
- Help!



## Industrial Assessment Centers 2012-2016



U.S. DEPARTMENT OF  
**ENERGY**  
Energy Efficiency &  
Renewable Energy

# IAC Program and Workforce Development

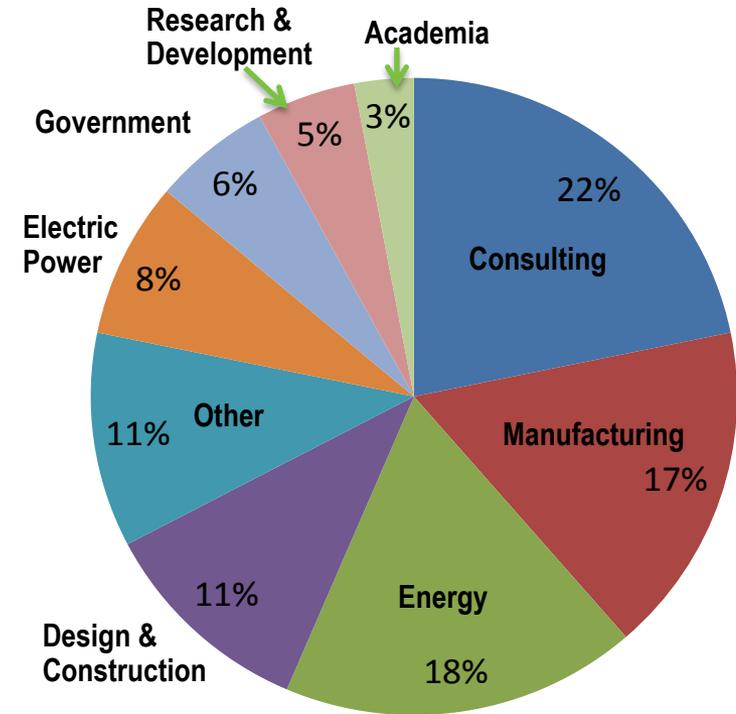
## Student Participation Overview

Year	Participating Students	Students Completing Training	DOE IAC Certificates Issued
FY 2007	305	118	58
FY 2008	285	95	65
FY 2009	312	115	56
FY 2010	243	100	39
FY 2011	344	164	110

Source: [www.iacforum.org](http://www.iacforum.org) as of October 5, 2011

# IAC Alumni are the Nation's Premier Talent in Industrial Energy Efficiency: Part of the New Green Work Force

- ~3,020 students trained
- On average, 50% - 60% pursue energy-related careers upon graduation
- 100 – 160 students departing each year
- Engineering fields including Mechanical, Industrial, Electrical; some Business school participants, also
- Student status: Undergraduates – 70%, Graduates – 30%
- Average time spent in IAC: 18 months



## Alumni Case Studies

- Finished two alumni case studies
  - Bill Eger, Univ. of Dayton
  - Ryan Esch, Bradley Univ.
  - Tony Simon, Univ. of Washington\*
- Located on IAC Forum website
- Developing:
  - Director Case Studies
  - Company Case Studies
- **We Need More!!**

## 2011 Student & Alumni Newsletter

- Several good student & alumni articles
- **Call for 2012 newsletter articles is coming up!**

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

### Industrial Assessment Centers Alumni Success Story

#### Bill Eger, University of Dayton

##### IAC Roots

Bill Eger joined the Industrial Assessment Center (IAC) in the spring of 2004, while he was working on his master's degree in Mechanical Engineering at the University of Dayton, Ohio. He stayed with the IAC for more than two years, departing the program in December of 2006. During his time with the IAC, Bill completed 73 IAC assessments and participated in DOE's Plant-Wide Assessment and Save Energy Now programs. One of his most notable learning experiences at the IAC was being part of a team that, at the request of Senator Sherrod Brown's (Ohio) office, conducted analysis and design of cogeneration opportunities for a northern Ohio manufacturer. This project was executed in collaboration with the Department of Energy's Midwest CHP Applications Center. During his tenure as the IAC Lead Student, Mr. Eger enjoyed several opportunities to speak with CEOs and senior-level executives of prominent companies on the value of energy savings in relation to business profitability.

In addition to performing regular IAC activities, Mr. Eger utilized cases of retrofit initiatives implemented by the University of Dayton IAC clients to publish research on extending the International Performance Measurement and Verification Protocol to measurement of industrial energy retrofit savings.

##### Career Highlights

Mr. Eger is now the Energy Manager for the City of Alexandria (Alexa) for implementing multiple energy reduction opportunities and aware throughout the community. Thus far, Mr. Eger and his team have reductions in City operations by over 8%. Sustaining these energy savings for potential client. He is currently working on implementing an energy management system in the long term.



Bill Eger, University of Dayton IAC Alumni



Tracking efforts community is a goal. This end, Mr. Eger is completing a cogeneration system to implementing an energy management system for the city.

Aside from plant retrofits, Mr. Eger is leading a Block Grant program to implement energy efficiency and clean energy (renewable energy systems, a vegetative green roof, hybrid vehicle pool energy-retrofit revolving loan fund program). In addition, he is currently conducting system retrofits, and an interval metering system for City facilities.

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### Industrial Assessment Centers Alumni Success Story

#### Ryan Esch, Bradley University

Ryan Esch was a member of the Industrial Assessment Center (IAC) at Bradley University while he was working toward a Master of Science in Mechanical Engineering. Over the course of three semesters, between January 2009 and June 2010, Mr. Esch participated in 22 client site visits and audits. In addition to contributing significant work to eight final assessment reports, Mr. Esch was able to provide on-site support for students and employees during the site visits. His skill in recognizing opportunities for energy savings proved to be a valuable teaching tool for other IAC members. In Mr. Esch's experience, energy efficiency opportunities varied from site to site, but common assessment recommendations included efficient lighting fixtures, high efficiency motor upgrades, and radiant heating.

Throughout his work with the IAC, Mr. Esch noticed time and time again that the benefits of the IAC program extend beyond the students being trained to include the clients receiving the energy, waste, and productivity assessments. He observes that "especially with the current state of the economy, helping companies lower their overall operating costs by installing energy efficient equipment can be the difference between keeping an employee hired or letting him go, or possibly the difference between keeping the facility open and shutting down." While conducting IAC assessments for small- to medium-sized manufacturing facilities in the Midwest, Mr. Esch quickly recognized the need for services provided by programs such as the IAC to assist facilities in identifying areas where low-cost energy efficient improvements can be made. Mr. Esch recalls, "I visited a number of sites that were using equipment that was at the end of its useful life. I was able to show plant managers how cost effective it was to pursue energy efficient alternatives." Seeing the long-term benefits of an IAC audit was a hugely beneficial part of Ryan's IAC experience, ultimately helping him shape his future career path.

##### Career Highlights

Currently, Mr. Esch is working as a project engineer for Energy and Resource Solutions (ERS), a progressive energy engineering and consulting firm based in North Andover, Massachusetts.

The energy efficiency skills Ryan developed while working at the IAC are particularly suited to the geographic location in which he works. Due to the high population density of the Northeast, reducing energy demand is one of the top priorities for utility companies in the region. At ERS, Mr. Esch performs energy audits to project savings that could be generated by installing energy efficient equipment. Projected energy savings are then used by utilities to design reward programs for customers who qualify to install efficiency measures. Mr. Esch describes his role at ERS as an evaluator who "essentially benchmarks the success of the measures after they have been installed for the utility company, so the program can be improved for the next year."



Ryan Esch, Bradley University IAC Alumni



His role at ERS also gave Mr. Esch the opportunity to assist with a study estimating the potential capacity for combined heat and power (CHP) in the state of

- On-line requests are processed through the certificates link on [www.iacforum.org](http://www.iacforum.org)
- **Students and alumni must be in the IAC registry to receive certificates**
- Deadlines occur 3 times per year:
  - October 1, March 1, and July 1
- Certificate process
  - Student initiates request online,
  - Director/AD receives email notification with link
  - He/she completes the request online
  - Certificates arrive
- Certificates are mailed to the Directors within 30 days of deadline



## Qualification criteria for students and alumni

- Minimum of 2 semesters or summers
- Minimum of 6 assessments conducted
- Demonstrates **8 of 10** core IAC skills (AR identification, report writing, savings calcs, teamwork, client interaction, utility data analysis, conceptual AR designs, leadership, energy management, others)

### Industrial Assessment Centers Program Student Certificates of Participation



#### Background

The Department of Energy (DOE) Headquarters issues Certificates of Participation to students that meet minimum criteria for successful participation in the IAC program. The certification criteria were established by a panel of current IAC Directors, reviewed by IAC Lead Students, and approved by DOE Headquarters. Certificates will identify the student, center, number of assessments completed, IAC service dates, academic status of the student (undergraduate or graduate) during his/her service and core skills achieved. The certificates verify that the student has met the four minimum criteria, defined as:

- 1) Completion of a minimum of 2 semesters or summers with the IAC
- 2) Completion of a minimum of 6 plant assessments
- 3) Demonstrates a minimum of 8 of the 10 Core Skills
- 4) Student has a complete and accurate record in the IAC student registry

The 10 IAC core skills are identified as:

- 1) Assessment Recommendation Identification
- 2) Report Writing
- 3) Energy Savings Calculations
- 4) IAC Teamwork/Group Interaction
- 5) Client Interaction
- 6) Utility Data Analysis
- 7) Conceptual Assessment Recommendation Designs
- 8) Leadership
- 9) Understanding of ISO 50001 Energy Management Systems
- 10) Other

The Program Manager for the EERE Industrial Technologies Program Office and the center Director will sign each certificate. Students may use certificates as proof of IAC experience for future employers and/or for demonstration of licensure experience.

#### Certification Process

1. Student has participated in the on-line IAC Student Registry located at: <http://www.iacforum.org/iac/apps/service-page/Registry1>
2. Student completes a minimum of 2 semesters or summers AND a minimum of 6 plant assessments AND demonstrates a minimum of 8 of the 10 Core Skills. Exceptions will be considered on a case-by-case basis and should be documented by the Director or Assistant Director. Requests for certificates for IAC alumni will be considered as long as the criteria are met and the requests are routed through the center's Director or Assistant Director.
3. Qualifying Student electronically completes the Record of Accomplishment (ROA) located at: <http://www.iacforum.org/iac/apps/service-page/ROARequestIntro>.
4. Director will receive e-mail notification to electronically approve, modify or deny the completed on-line ROA form. Packages for each school must be completed and approved by the center's Director or Assistant Director before a certificate is issued. Upon on-line approval, ROA packages will automatically be logged in the appropriate database for review and processing by Thomas Wenning, (via her assistant, Susie Allen). The ORNL review process occurs 3 times per year. ROA forms may be submitted at any time, however the deadline for each processing period is as follows: March 1, July 1 and October 1. ROA forms received after these dates will automatically be placed in the queue for the next scheduled certificate review period.
5. ORNL issues a memo to DOE requesting certificates for compiled list of approved students.
6. Certificates are mailed to centers to be signed and distributed by the center Director. Students may request a copy of their ROA to accompany the certificate.

#### Questions and Clarifications

Please direct all questions regarding certification and the certification process to Susie Allen (assistant to Thomas Wenning) via phone at 865-740-4684 or email at [allenscd@ornl.gov](mailto:allenscd@ornl.gov).

- 1) *Assessment Recommendation Identification*
- 2) *Report Writing*
- 3) *Energy Savings Calculations*
- 4) *IAC Teamwork/Group Interaction*
- 5) *Client Interaction*
- 6) *Utility Data Analysis*
- 7) *Conceptual Assessment Recommendation Designs*
- 8) *Leadership*
- 9) *Understanding of ISO 50001 Energy Management Systems*
- 10) *Other*

# IACForum vs. IAC.Rutgers

## IACForum.org

**IAC Forum**  
A Web Site for Students and Alumni of  
DOE's Industrial Assessment Centers

Registry News Exchange Careers Resources Contacts

**Welcome**  
The Industrial Assessment Center (IAC) is a Department of Energy Program that has been training energy experts for the last 30 years. However, the IAC is more than an energy program; it is also a workforce development program that serves to fulfill the majority of the spectrum for a new energy workforce. Through partnerships with 26 universities across the nation, the IAC produces a steady stream of outstanding energy-savvy engineers ready for careers including project engineering and management, product research and development, energy consulting and engineering services, energy-related design and construction, training and outreach, and energy policy. Employers of IAC graduates also cover the full-spectrum of the energy industry, including: utilities, ESCOs, product manufacturers, NGO's, consulting and construction firms, educational institutions and research organizations.

The IAC Forum Student and Alumni website provides a convenient way for all current and past IAC program participants to communicate and share ideas with each other. This website also serves as the central location for recruiters and those companies seeking IAC energy experts to connect with current students and alumni.

Information will be updated continuously, so log-in often. This is a tool for all IAC students and alumni to use and it can only be improved through your **feedback**. Please take a moment to browse and comment on how you think the site can be more helpful.

**Technical Links**

**What's New?**  
The IAC Forum is continually updated. Please [report any problems or suggestions](#).

**IAC Program Metrics at a Glance**

FY	Participating Students	Departing Students	DOE-IAC Certificates Issued
2010 (to date)	243	100	39

[Read more about IAC Program metrics...](#)

**Reminder to Graduating and Departing IAC Students.** Please take a few minutes to complete your IAC Exit Interview before leave your center. The Exit Interview is part of the IAC Student Registry and is located on the [IAC Student Services Homepage](#)

**NEW Efficient America: Greening the Industrial Workforce** is an educational briefing intended to explore the state of active training programs that are integrating energy efficiency into the preparation of next-generation manufacturing professionals. **The IAC program will be a primary focus of this briefing. Click Here For Full Details**

**NEW The Demonstration of the IAC Wiki Based Energy Efficiency Reference** webinar, hosted by the Oregon State IAC, is now available.

ACEEE is offering student scholarships for the 2010 ACEEE Summer Study on Energy Efficiency in Buildings to be held August 15-20, 2010 in Pacific Grove, CA). The scholarships cover the conference registration fee, housing and meals, and a portion of travel costs. More information and applications can be found at [The ACEEE Web site](#)

**2010 IAC Student and Alumni Newsletter (PDF 800 KB)**

**Connect with the Oak Ridge National Laboratory on Face Book** to see what is going on at ORNL.

**The 2010 IAC Lead Student Meeting** was held on February 4-5, 2010 in Washington DC. [Click Here](#) to view the presentations.

**The "Career Opportunities in Energy Management" webinar has been recorded. Click Here** and select "Career Webinar for Students Nov-2009"

## IAC.Rutgers.edu

U.S. Department of Energy  
**Industrial Assessment Centers**

**About the IAC**  
IAC Database  
Find an IAC Center  
Lecture Series  
Technical Docs  
Case Studies  
Useful Websites  
News & Events  
Contact

**IAC Field Managers**  
The IAC program is field managed for the DOE by Center for Advanced Energy Systems at Rutgers University.

Any comments or suggestions:  
[webmaster@iac.rutgers.edu](mailto:webmaster@iac.rutgers.edu)

Internal Use

U.S. Department of Energy  
Energy Efficiency and Renewable Energy

THE STATE UNIVERSITY OF NEW JERSEY  
**RUTGERS**

CAES  
CENTER FOR ADVANCED ENERGY SYSTEMS

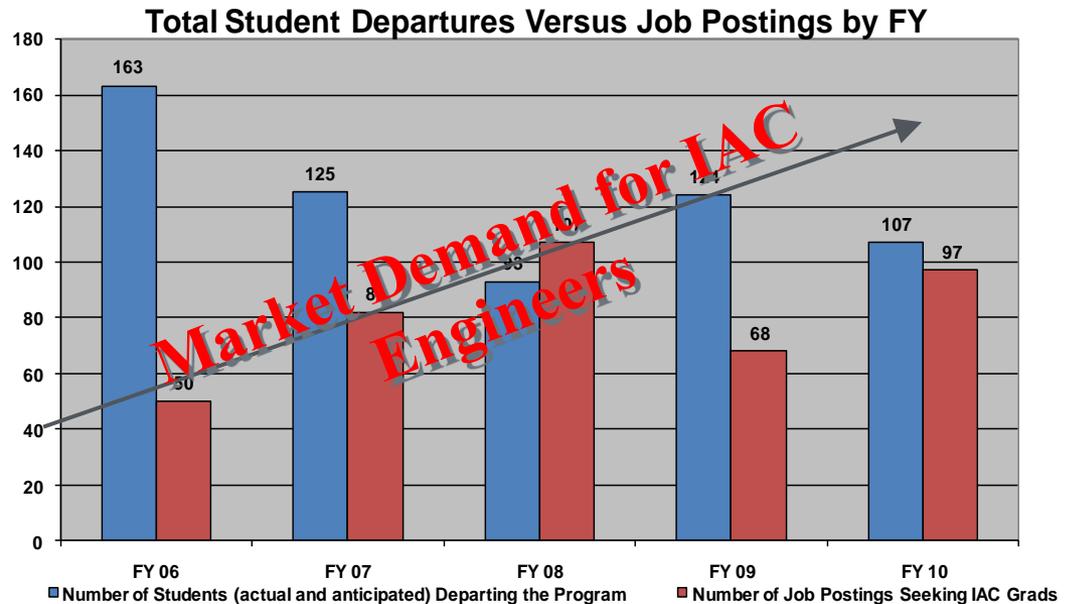
W3C HTML 4.01 ✓ W3C CSS ✓

Support for the Industrial Assessment Center Program is provided by the US Department of Energy's Office of Energy Efficiency and Renewable Energy. This support is gratefully acknowledged. Field management of the program is conducted by Rutgers, the State University of NJ.

- Registry – Student Records Database
- Job & Resume Postings
- Newsletters, Presentations, and Current Announcements

- Assessment Metrics Database
- Assessment Uploads

- Offers a window to IAC students and alumni for potential employers, policymakers, media, non-IAC schools
- Important announcements are listed on the home page
- Many students and alumni use the website to share information about their work
- We are always interested in new articles and highlights
- The career section is VERY effective at matching IAC students and alumni with energy-focused employers
  - Post resumes regularly
  - Remember to check the site frequently for new job opportunities!!



- Located at: <http://www.iacforum.org/>
- **Lead Student Responsibilities**
  - Ensure that all students complete the registry when entering the IAC
  - Ensure that all students complete the exit interview when departing the IAC
  - Ensure that lead/active/inactive status information on students is current
- Lead Student Query should be used to maintain student status information regularly
  - Active/Inactive student status
  - Deactivating students:
    - Lead students should change status of students who departed without an exit interview.
    - Deactivation requires reason for departure and updated contact information.
  - Lead Student(s) appropriately identified
  - Update contact information for alumni

**IAC Student Information System**

Home | Main Menu | Help

### IAC Student Information Services Home Page

- IAC Student Registry
- IAC Exit Interview
- IAC Lead Student Query
- Address Update for Former Students
- IAC Student Email List Generator
- IAC Student Participant Reports (IAC Management Only)

*Welcome to the IAC Student Information Services Home Page!*

We have made a few changes based on feedback from IAC Students and Program Management. The following changes and upgrades are now in place:

- 1) The IAC student registry and exit interviews are now password protected. All IAC users must use userids and passwords in order to log into the system. This added level of security also allows students to make changes (e.g. updates for contact information, lead student status, etc) to their registry information directly.
- 2) Directors may now use the registry to update contact information for former students and retrieve lists of past students.
- 3) Directors and lead students may use the email list generator to create text lists of current (active) and former (inactive) IAC students for use in email correspondence.
- 4) IAC Student Participant reports, based on aggregated data in the student registry, are generated quarterly and available to IAC Program Management and Directors.

Questions or suggestions about the content and interface of this site should be directed to Michaela Martin, at [martinma@ornl.gov](mailto:martinma@ornl.gov).

Questions about userid/password security should be directed to Susie Allen at [allensc@ornl.gov](mailto:allensc@ornl.gov).

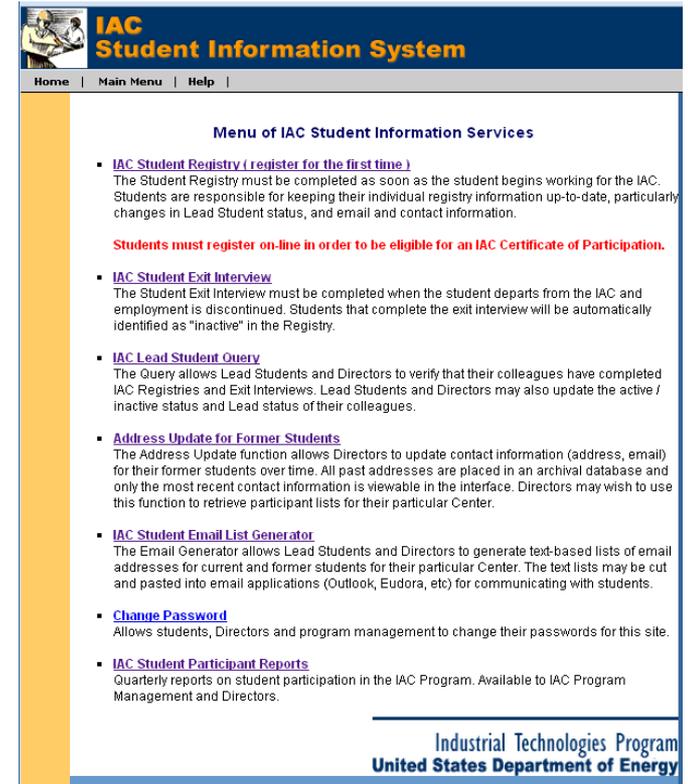
Login

- of -

Obtain User ID and Password

Industrial Technologies Program  
United States Department of Energy

- All Students **MUST** complete an IAC registry record when joining their respective centers
- An exit survey must be completed by each student prior to their departure from the IAC program
- It is important that the IAC Student Registry be accurate and up-to-date

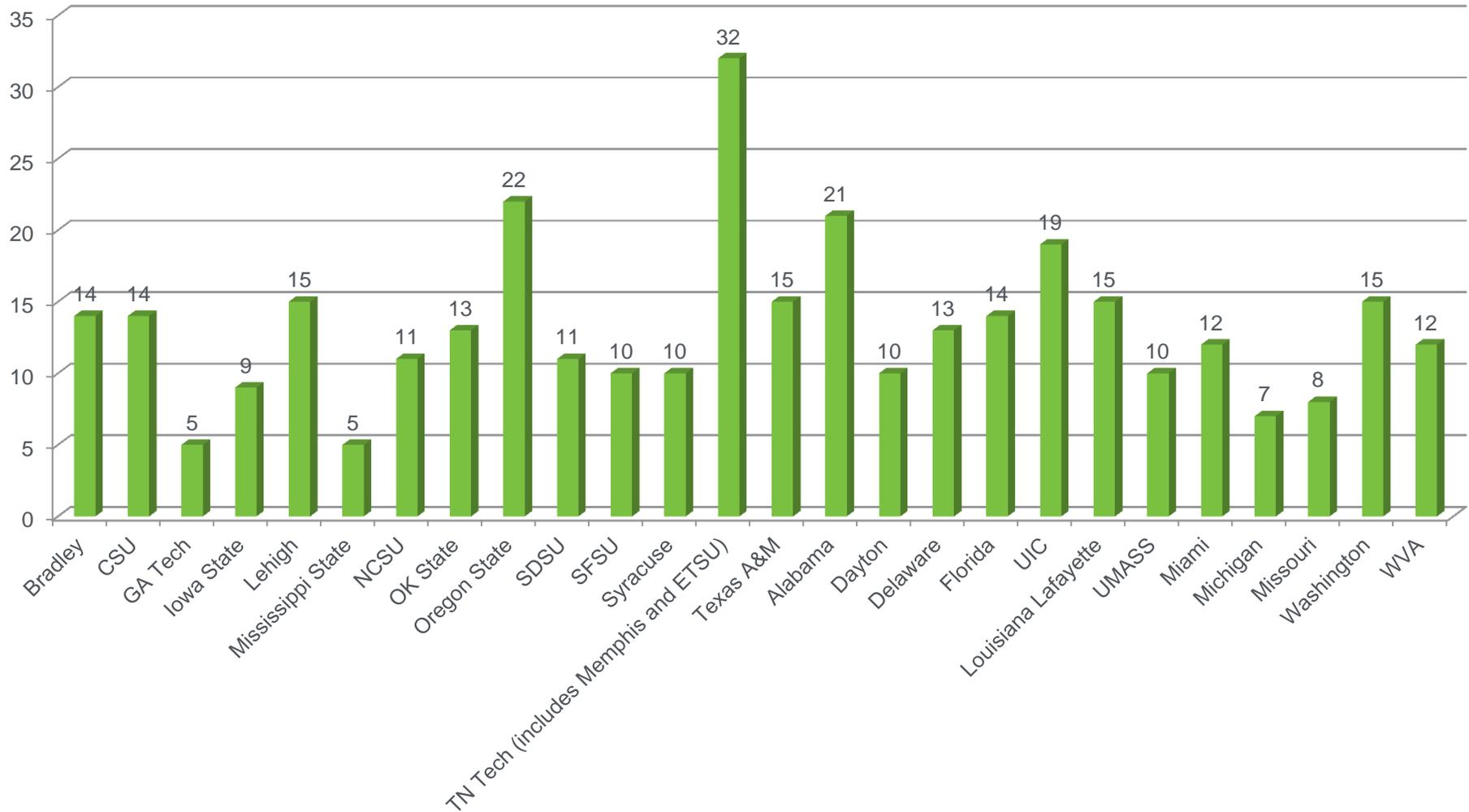


The screenshot shows the IAC Student Information System website. At the top, there is a navigation bar with links for Home, Main Menu, and Help. Below this is a section titled "Menu of IAC Student Information Services" which lists several services with brief descriptions:

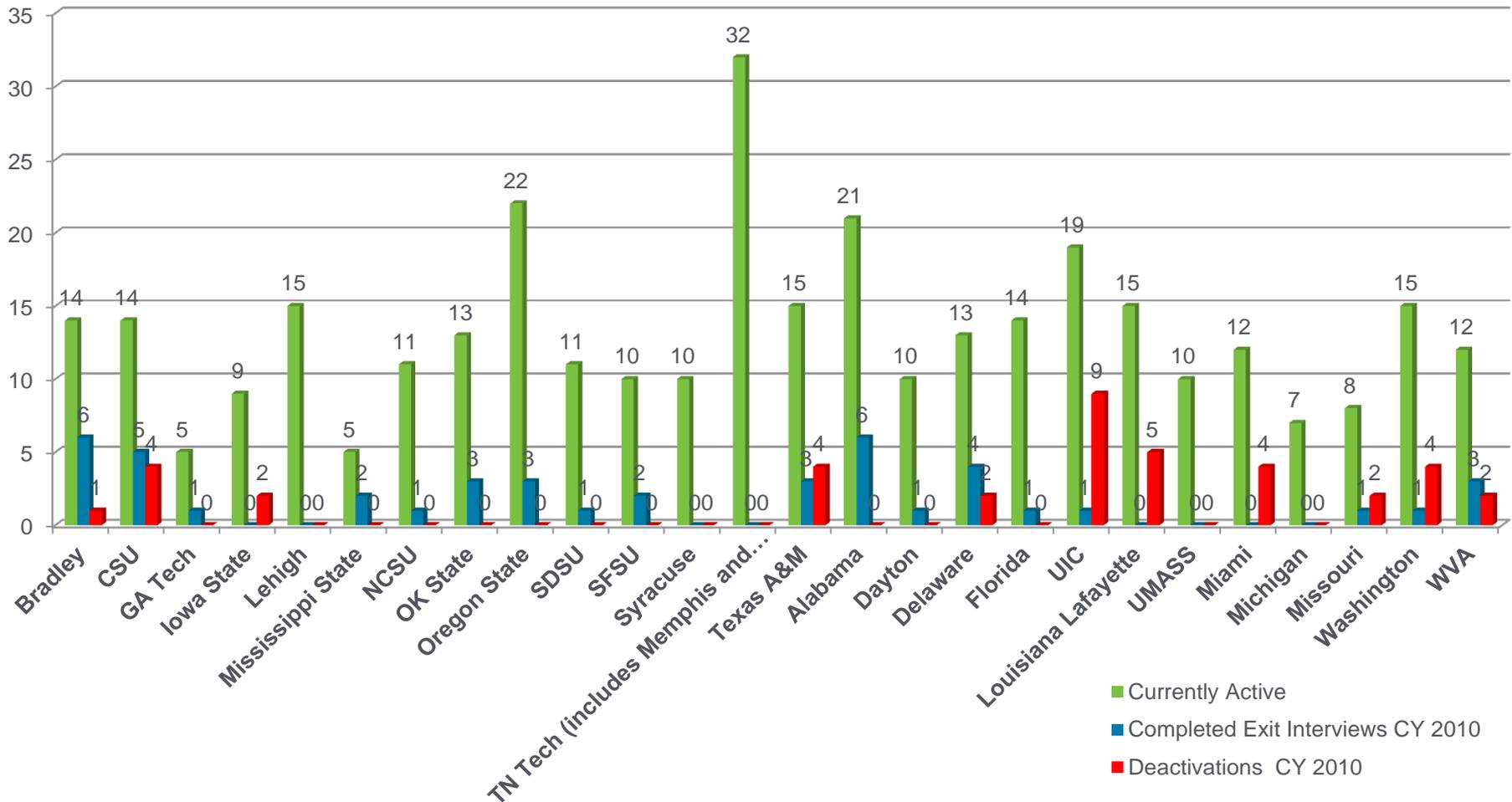
- IAC Student Registry (register for the first time)**: The Student Registry must be completed as soon as the student begins working for the IAC. Students are responsible for keeping their individual registry information up-to-date, particularly changes in Lead Student status, and email and contact information. **Students must register on-line in order to be eligible for an IAC Certificate of Participation.**
- IAC Student Exit Interview**: The Student Exit Interview must be completed when the student departs from the IAC and employment is discontinued. Students that complete the exit interview will be automatically identified as "inactive" in the Registry.
- IAC Lead Student Query**: The Query allows Lead Students and Directors to verify that their colleagues have completed IAC Registries and Exit Interviews. Lead Students and Directors may also update the active / inactive status and Lead status of their colleagues.
- Address Update for Former Students**: The Address Update function allows Directors to update contact information (address, email) for their former students over time. All past addresses are placed in an archival database and only the most recent contact information is viewable in the interface. Directors may wish to use this function to retrieve participant lists for their particular Center.
- IAC Student Email List Generator**: The Email Generator allows Lead Students and Directors to generate text-based lists of email addresses for current and former students for their particular Center. The text lists may be cut and pasted into email applications (Outlook, Eudora, etc) for communicating with students.
- Change Password**: Allows students, Directors and program management to change their passwords for this site.
- IAC Student Participant Reports**: Quarterly reports on student participation in the IAC Program. Available to IAC Program Management and Directors.

At the bottom right of the page, it says "Industrial Technologies Program United States Department of Energy".

## Number of students Currently Active



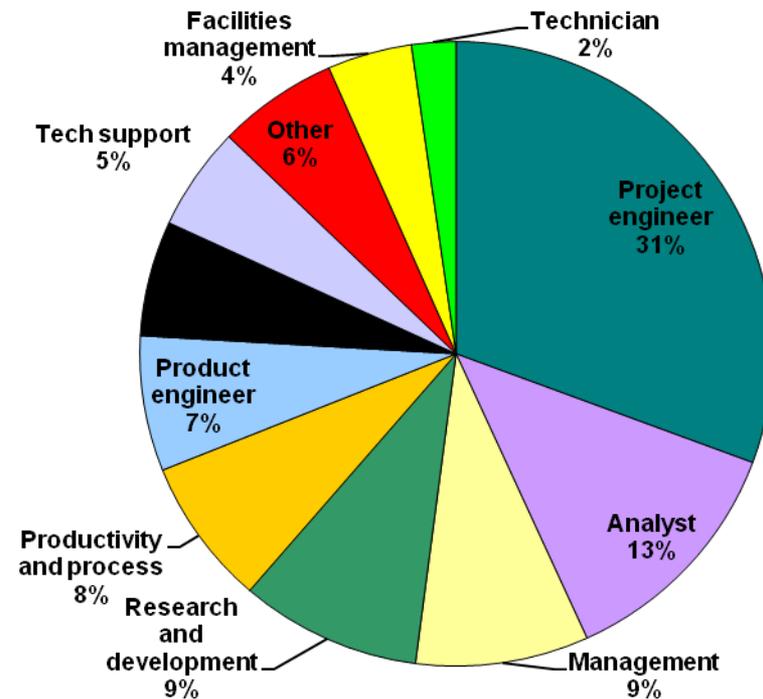
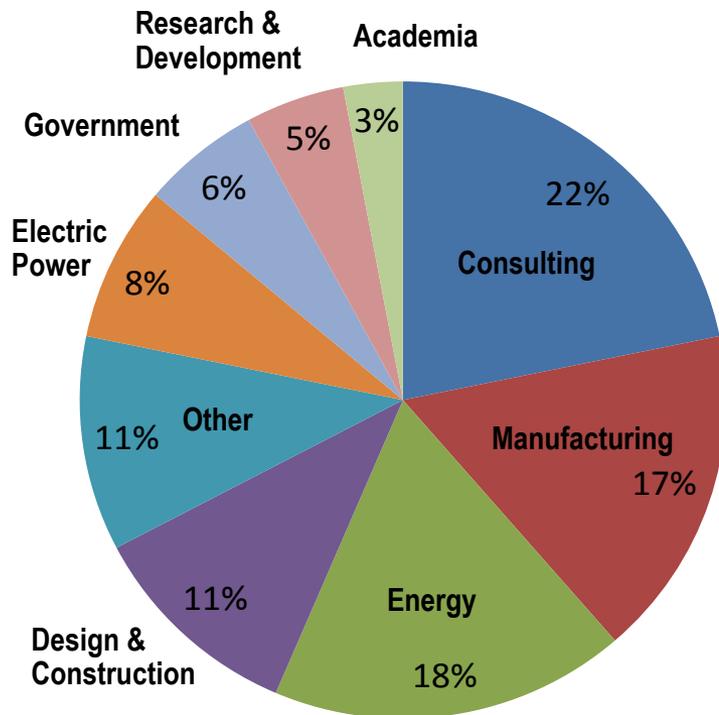
## Number of Active Students vs Number Completing Exit Interviews or Being Deactivated in CY 2010



– Please review list of active students for accuracy!

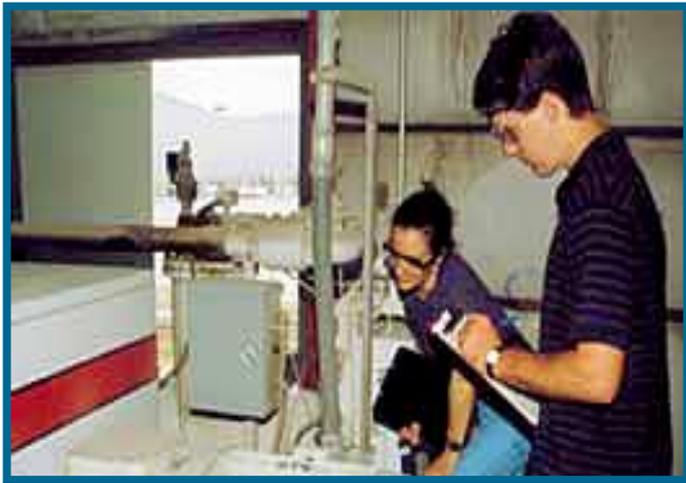
# Why This Is SO Important

- Registry data defines the number of students in the IAC at any time
- Exit interviews identify the number of students that are departing for careers in energy



## The IAC Difference

*"We get a real world perspective of a variety of industries. We learn about conservation and things companies need to do to save energy and money." –Andrew Hanegan, Texas A&M IAC*



IAC student engineers looking at HVAC equipment at a manufacturing plant



An IAC student engineer uses an infrared gun at a manufacturing plant

## **Adam Knapp, (MS, PE, MBA, CEM) IAC Syracuse University**



- Operations Leadership Associate at United Technologies
- Evaluated opportunities in the UK energy performance contracting market as research for MBA from Oxford University
- Former Project Engineer at Clough Harbour and Associates

## **Ben Erpelding (M.S., P.E., C.E.M) IAC San Diego**



- Director, Optimum Energy LLC.
- Over 11 years of experience in energy efficiency
- Performed over 500 detailed HVAC energy assessments
- Erpelding's efforts over the last 6 years resulted in a 16% decrease in San Diego County's energy consumption

## **Gary Epstein, IAC University of Massachusetts**



- UMass IAC Alumni founded ERS, Inc.
- The primary objective at ERS, Inc. is to assist utilities, government and large commercial and industrial end users solve complex energy and resource problems in a cost effective manner.

- University Briefs created for an Alliance to Save Energy capital hill briefing (June 2010)

## University of Dayton

**Director:** Dr. Kelly Kissock, Professor of MAE, P.E.  
**Assistant Directors:** Dr. Andrew Chiasson, Rebecca Blust

**Research Focus:** Energy Informatics, Industrial Systems Energy Use Modeling, Building Energy Use Simulation



Award for Excellence in Energy, U.S. DOE Casting and Ten Industries, 2003 IAC

panies as McDonough-Braungart, Johnson Sustainable Energy, Siemens, ACEEE, and Lager (Bill Eger) for the City of Alexandria,

## Syracuse University

**Director:** Frederick J. Carranti, BSME, MSME, P.E.  
**Assistant Director:** John Dannenhofer, D.Sc.

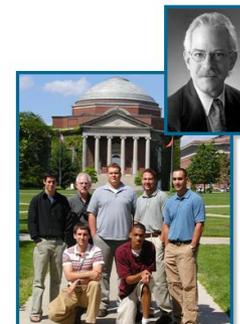
**Research Focus:** Energy systems, design, engineering education

**IAC Related Curricula:** Capstone design, Energy Conversion

**Achievements and Awards:** 2009 Center of Excellence

### Distinguished Alumnae:

- > Matan Marom & Wade Willott, Schneider Electric
- > Ross DiLiegro is one of n
- > Most Syracuse alumni are in the consulting industry, and a complete advanced degr



## Texas A&M University

**Director:** Warren M. Heffington, Ph.D., P.E.

**Director Background:** Participated or supervised over 500 industrial and commercial/institutional building energy assessments, including activities in three foreign nations. Directed over \$4 million of related



Warren Heffington



James Eggebrecht

## Oklahoma State University

**Director:** William J. Kolarik, Ph.D., P.E.  
**Assistant Director:** Dr. Wayne C. Turner

**Director Background:** Dr. Kolarik has served as a Malcolm Baldrige National Quality Award Examiner for five years. He has published a number of books, articles, and proceedings papers dealing with his experience in research and professional practice.

**Research Focus:** Energy, waste and productivity

**Achievements and Awards:** Over 675 clients served in 20 years. DOE Center of Excellence. Staff involved in founding of the Association of Energy Engineers.

### Distinguished Alumnae:

- > Many OSU IAC alumni have developed into leaders in the energy management field.
- > Employers include Johnson Controls and H2O Applied Technologies.



## West Virginia University

**Director:** Dr. B. Gopalakrishnan, PE, CEM  
**Assistant Director:** Dr. Wafik Iskander

**Research Focus:** Industrial Energy Utilization and Waste Reduction, Industrial Productivity Enhancement, Artificial Intelligence and Expert Systems, Concurrent Engineering, Manufacturing Systems Engineering, Facilities Planning and Material Handling, Green Buildings

**Achievements and Awards:** 2005 IAC Center of Excellence, EERE Save Energy Now Award 2006, US DOE Governors' Award for Excellence in Industrial Energy Efficiency 2009, West Virginia Division of Energy Energy Champion and Saver Awards in 2008 and 2010

**Distinguished Alumnae:** Nasr Alkadi, Ph.D. 2007, formerly with General Motors, now on staff at ORNL, Deepak Gupta, Ph.D. 2007, Assistant Professor at South East Missouri State University



From Left to Right: Samhita, Kartik, Nishit, Krishna, Anne, Ruben, Dr. Gopala (Director), Dr. Iskander (Asst. Director), Senthil, Phani, Seyed, Dayakar

## Newsletter

- **Call for articles and briefs will go out by the end of the month**
- IAC news briefs from all centers
- Ideas for articles from students and alumni are accepted all year

## Webinars

- Avenue of collaboration
- Topics of student interest?

## 2012 Student Meeting

- Location thoughts?
- Looking for new ideas and presentations from (& for) our students



**Syracuse University.** The Syracuse University IAC had another exceptional year, full of learning experiences and successful energy assessments. Evan Beckerman received his B.S. in Mechanical Engineering and is currently employed in California. Chris Buttitta, a long-time employee of our center as an undergrad, began his M.S. in engineering management and will continue his duties as an employee of the center. Chris is also working to design a lift to assist disabled veterans with

wheelchairs board charter fishing vessels at Oswego. Our center has also grown in size, with undergraduates Brian Granetz and Cole Tu students Brandon Peery and Phil Gwyther and their director Fred Carranti to write a portfolio that is pending publication in *Bioscience*. The MO-IAC looked at the effectiveness of combined heat installations on the carbon footprint of several in the Northeast.

**Tennessee Tech.** The Tennessee Tech University is partnering with Schneider Electric Corporation in the Save Energy Now LEADER program. As part of the program, Schneider has pledged to reduce energy intensity by 25% over the next 10 years and Schneider are participating in the South Management Demonstration project to assist companies in achieving these and other energy goals. TTU will be supporting Schneider in numerous ways including assisting with establishing an energy baseline and creating an energy management plan, identifying energy savings opportunities, and with procuring technical assistance or financing for implementation of energy efficiency projects. TTU IAC will also be consulting with Schneider on the development of their ISO 50001 Energy Management system and their certification in the Super Performance program.

**Texas A&M University.** Five Aggies have applied for and received IAC certificates.

**University of Washington.** In 2010 there were 10 certificates awarded to IAC students.

**West Virginia University.** The WVU IAC conducted regular assessments, and the reports focused on QuickPep, MotorMaster+, 3E Plus, SSST and Practices Software tools. The assessment

### University of Missouri-Columbia IAC Partnered with Columbia Water & Light

Chatchai Pinthuprapa, University of Missouri IAC Lead Student; [cp2nf@mail.mizzou.edu](mailto:cp2nf@mail.mizzou.edu)

The MO-IAC partnered with Columbia Water & Light, a service provider in Columbia, MO, to conduct a motor assessment for Columbia Water Treatment Plant this summer.

Columbia Water Treatment is the largest water treatment plant in Columbia. It supports the daily water supply for Columbia. It includes a filter building, lime building and more than 20 wells outside the plant. There are more than 60 motors in the plant which burn a huge amount of energy every year.



Dr. Bin Wu climbing on the top of the well at Columbia Water Treatment well station

will be attending this year's directors' meeting. It is anticipated that a group of IAC directors will be invited to the UAIEE first official directors' meeting the following year.

### San Francisco State University IAC Performs Assessment at Chocolate Factory

Dan Lake, IAC Student, SFSU  
[dplake1980@gmail.com](mailto:dplake1980@gmail.com)

In the past year the SFSU-IAC team visited two full-scale chocolate manufacturing facilities, both with global  
Left to right, Vish Ganti, Mohammad Ganji, Dr. Ahmad Ganji,



Daniel Lake, Lana Bonotan Agot, Michael Green

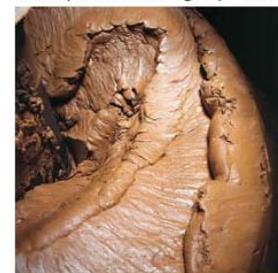
annual sales above \$50 million and annual energy costs at or above \$1 million. Due to the facilities' grandeur, scale, and complex processes they offered numerous opportunities for energy conservation. This was a great experience for our team, putting our analytical abilities to the test and providing an opportunity for the team to grow.

Both facilities process chocolate from raw cocoa bean to finished product. The process begins with passing the cocoa beans over a shaker table in order to remove small stones and other foreign objects. Next the beans are



Winnowing Process

Once separated from the shells the cocoa nibs are passed through a grinding mill which breaks them down into a warm paste consisting of particles of cocoa powder and



Conching Process

cocoa butter (fat) referred to as chocolate liquor. If the chocolate liquor is not immediately molded into chocolate, the liquor and cocoa powder cake is separated by pressing the liquor through fine screens. The cocoa powder cake is either packaged and shipped or used to make other chocolate products. The next steps in the production of chocolate are the refining and conching processes. Typically treated as two separate steps in chocolate manufacturing, conching and refining have the same goal, which is to further break down and mix cocoa particles with other ingredients such as milk and sugar with a controlled application of heat. The conching

- 1. Newsletter articles and university briefs**
- 2. Pictures**
- 3. Video Clips**
- 4. Stories & Articles**
- 5. Alumni Case Studies Suggestions**
- 6. Presenters for webinars and IAC student meeting**
- 7. Please keep on your Lead Student to maintain the registry**

- Established in year 2008
- Professional networking site for IAC students and alumni
- 280 members and counting
- News items, professional profiles, discussions

The screenshot shows the LinkedIn group page for "Industrial Assessment Centers (IAC) Students and Alumni". The page is titled "Industrial Assessment Centers (IAC) Students and Alumni | LinkedIn" and includes a navigation bar with options like Home, Profile, Contacts, Groups, Jobs, Inbox, and More... The group page features a search bar for members, a list of new members from the last 7 days, and a main section for members (202) sorted by most relevant. The members list includes profiles for Susie Allen, Brian Pepin, Justin Gibides, Vitelio Silva, Daniel Trombley, Kevin Ng, Michaela Martin, and Michael Diep, each with their name, title, location, and follower count.

Industrial Assessment Centers (IAC) Students and Alumni | LinkedIn

Welcome, Susie Allen · [Add Connections](#) · [Settings](#) · [Help](#) · [Sign Out](#)

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**Industrial Assessment Centers (IAC) Students and Alumni**

[Overview](#) [Discussions](#) [News](#) [Jobs](#) [Subgroups](#) [Manage](#) [More...](#) [Group Profile](#)

**What is Following in LinkedIn groups?** Following makes it easy for your connections and others to see your contributions across groups you share. Just click on "Follow" next to any name in your groups.

**Search members**

Search for names or keywords to find specific members of this group.

[Search](#)

[Advanced Search](#)

**New Members: Last 7 Days**

- Alexandre Kisslinger Rodrigues**, Business Developer at Marifter Renewables Portugal
- Pablo Rivera**, Maintenance and Reliability Engineer Uruguay
- Lana Bonotan Agot**, Student at San Francisco State University San Francisco Bay Area
- Ryan Tiraschi**, Mechanical Engineer Greater Denver Area
- Jen Schembari**, Employment Specialist at CHA Albany, New York Area

**Members (202)**

Sorted by: most relevant Showing 1 - 20 of 202

- Susie Allen** (10) Data and Communications Independent Consultant, Knoxville, Tennessee Area 12 followers | [See activity](#)
- Brian Pepin** (10) CEO, Energizing Solutions, Greater Seattle Area 104 followers | [Stop following](#) | [See activity](#)
- Justin Gibides** (10) Energy Engineer, Greater Philadelphia Area 82 followers | [Stop following](#) | [See activity](#)
- Vitelio Silva** (10) Sr Performance Assurance Engineer at Johnson Controls, United States 76 followers | [Stop following](#) | [See activity](#)
- Daniel Trombley** (10) Industrial Engineering Associate at American Council for an Energy-Efficient Economy, Washington D.C. Metro Area 36 followers | [Stop following](#) | [See activity](#)
- Kevin Ng** (10) Energy Engineer at HDR Engineering, Inc., San Francisco Bay Area 100 followers | [Stop following](#) | [See activity](#)
- Michaela Martin** (10) Senior Staff Member at Oak Ridge National Laboratory, Knoxville, Tennessee Area 30 followers | [Stop following](#) | [See activity](#)
- Michael Diep** (20) Energy Auditor at Industrial Assessment Center, San Francisco Bay Area 6 followers | [Follow Michael](#) | [See activity](#)

# Thank You!

## Thomas Wenning

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